

## AMENDMENTS

### IN THE SPECIFICATION:

On Page 2, please replace the second paragraph with the following:

B1  
As shown in Fig. 13, receiver 6' comprises a first bore 22' and a second bore 23'. The second bore 23' is adapted to receive valve body 52', which partitions second bore 23' into a first chamber 24' and second chamber 26'. Valve body 52' has coaxial bores 53' and 54', which are transverse to bore 59', which act as fluid ports 53' and 54' and 59'. The diameters of bores 53', 54' and 59' are selected to achieve a ratio of fluid flow between port 54' and 59' to accommodate the proper firing and reload functions of the gun, as described below. Valve body 52' is sealed by O-rings 48' and 50', and secured in receiver 6' by bolt 56'. Poppet 51' is seated in ports 53' and 54' and maintained by spring (not shown) 58'. Poppet 51' is comprised of valve pin 60' and valve cup seal 62'. Valve cup seal 62' is threaded on valve pin 60'.

On Page 3, please replace the third full paragraph with the following:

B2  
Meanwhile, the remaining portion of air, which flows through port 53' but does not flow through bolt port 59', instead flows through port 54'. This air creates pressure in blow-back chamber 63', which is formed by second chamber 26' and hammer 29', creating air pressure against hammer 29' to recoil (or "blow back") hammer 29' toward the ready position, until sear 12' engages hammer catch 47'. Vent 64' releases the air pressure in the blow-back chamber 63' as the hammer 29' is propelled into the ready position, so that hammer 29' may fire again in the next round. After hammer 29' displaces poppet 51', tension from spring (not shown) 64' along with compressed air pressure against poppet 51' reseats poppet 51', closing port 53'. Gun 1' is now

B2  
recocked and ready for firing. This firing sequence is known as semi-automatic, because the gun automatically recocks itself after firing.

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On Page 10, please replace the first full paragraph with the following:

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B3  
Fig. 6 further shows gaskets 127 on firing bolt 31 and hammer 29. Gaskets 127 are quad-rings in contrast to O-rings commonly used in the paintball industry. Whereas O-rings have a circular cross-section, quad-rings have a four-pointed-star cross-section, which can be pictured roughly as a square with the sides of the square bending inwards. When gaskets 127 are in use, that is, mounted on firing bolt 31 and hammer 29, each of the four corners of the rings are adjacent a surface. For example, when firing bolt 31 is placed in receiver 6, two corners of gasket 127 are adjacent the receiver and two corners are adjacent firing bolt 31. While the corners are in close proximity to receiver 6, they do not form a seal when firing bolt 31 is static. However, upon an impulse of gas, for example during the firing sequence of paintball gun 1, the quad-ring is compressed on the pressurized side forcing the pressured-side corners outward and creating a tight seal. This contrasts with common O-rings, which are designed to create a constant seal between two adjacent surfaces even when parts are static. But under pressure, the quad-rings create a tighter seal than O-rings. This tighter seal creates more drag on the moving part, that is, firing ~~bolt ring~~ 31 and hammer 29, which slows down the part. Because firing ~~bolt ring~~ 31 is made of a polymer, which is lighter than conventional metal firing bolts, the quad-rings 127 allow proper timing of the gun, which may not otherwise be achieved with conventional O-rings.

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On Page 15, please replace the third paragraph with the following:

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B4  
Fig. 1 illustrates receiver 6 of gun 1 of the present invention. Receiver 6 (also referred to as body 6) defines first bore 22 and second chamber 26. Second chamber

B<sup>4</sup>  
26 is adapted to receive hammer 29. Hammer 29 travels along a defined path within second chamber 26, and body 6 defines vent 64 between the first bore 22 and the second chamber 26 along at least a portion of the path of leading end 34 of hammer 29. Further, body 6 has first end 5 and second end 7, and vent 64 begins at first end 5 and extends along a partial length of body 6 toward second end 7 and extends over at least a portion of the path of the leading end 34 of hammer 29.

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On Page 16, please replace the first paragraph with the following:

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B<sup>5</sup>  
Vent 64 may also be defined by reference to blow-back chamber 63. As described above, hammer 29 is slideably positioned within second chamber 26 of receiver 6 between a ready position, shown in Fig. 1, and a firing position, shown in Fig. 2. Blow-back chamber 63 is formed within second chamber 26 for facilitating the return of hammer 29 from the firing position to the ready position. Blow-back chamber 63 defines vent 64 between second chamber 26 ~~bore 23~~ and first bore 22 for allowing airflow passage.

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On Page 16, please replace the fourth paragraph with the following:

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B<sup>6</sup>  
The valve ~~valve~~ 55 of receiver 6 is made according to the process next described and illustrated in Figs. 10 and 11. In step 200, core 150 is inserted into mold 155. As shown in Fig. 11, core 150 comprises first cylinder 151 having first diameter 170, second diameter 172, and third diameter 174, wherein second diameter 172 is smaller than first 170 and third diameters 174. Moreover, fourth diameter 176 may be further provided. Each of the diameters 170, 172, 174, 176, correspond with second chamber 26, port 53, first chamber 24, and port 54, respectively. The diameter 172 and 176 may be adapted to allow for optimum airflow between port 59 and 54 to achieve the most efficient air bursts to fire the projectile and blow back hammer 29, as described above.

B6  
Core 150 further comprises second cylinder 152 positioned in parallel with first cylinder 151.

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On Page 17, please replace the second full paragraph with the following:

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B1  
In step 208, bore 185, shown in Fig. 1, is created between second diameter 172 of first cylinder 151 and second cylinder 152. Bore 185 can be formed by various machining processes, such as drilling. Bolt 190, shown in Fig. 2, is fitted into bore 185 leaving port 59. Meanwhile, second diameter 172 forms valve 53, and fourth diameter 176 75 forms valve 54.

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On Page 18, please replace the continued paragraph with the following:

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B8  
As illustrated in Fig. 1, barrel 65 is attached to receiver 6 by cowl 104. Receiver 6 is comprised of a polymer defining first bore 22. Cowl 104 is also made of a polymer, and retainer 105 is comprised of a hardened material molded into cowl 104. Cowl 104 is attached to receiver 6 by pins 106, 107. Barrel 65 is removeably attached to receiver 6 by attaching to retainer 105 on cowl 104. In one embodiment, the retainer is comprised of metal, although other hardened materials can be used, such as, for example, ceramic. Barrel 65 can be attached to receiver 6 by various mechanisms. For example, a projection may be attached to one of either retainer 6 or barrel 65 and a receptacle attached to the other of either barrel 65 or retainer 6, so that the projection and the receptacle cooperate to selectively engage each other. This may be accomplished, for example, by retainer 105 and barrel 65 being cooperatively threaded, or by using a mating bayonet connector. As shown in Fig. 2, cowl 104 further provides port 108 to communicate compressed air from linkage 21 to integral valve ~~compressed air chamber~~ 55. Seal 109 prevents compressed air from leaking between cowl 104 and

B8 receiver 6, thereby sealing first chamber 24. Finally, cowl 104 also houses spring 61, which maintains pressure on poppet 51.

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On Page 18, please replace the second full paragraph with the following:

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P9 Grip 4 further comprises a frame 125 defining substantially recessed interior portion forming receptacle 127. Projection 121 is integrally attached to adapter 20, and projection 121 fits into receptacle 127. At least one member 129 attaches projection 121 to frame 125. As shown in Figs. 1 and 2, the member 129 is a threaded fastener for bolting frame 125 to projection 121. Members 129, 129 attach adapter 20 to grip 4 using tension force, which is particularly desirable given the weight that the compressed air tank exerts on adapter 20 during use. When the compression air tank is connected to adapter 20, the weight of the tank is cantilevered back from grip 4, putting significant rotational force on the connection between grip 4 and adapter 20. The tensile force provided by members 129, 129 safely accommodate these forces. In another embodiment, member 129 may form a protrusion on one of either receptacle 128 ~~427~~ or projection 121 and a cooperating receiver may be provided on the other of either projection 121 or receptacle 128 ~~427~~. In this embodiment, projection 121 and receiver snap together, thereby coupling to attach projection 121 to frame 125.

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